



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,362	02/16/2006	Takafumi Yamaji	JFE-05-1864	5611
35811 7590 04/29/2010 IP GROUP OF DLA PIPER LLP (US) ONE LIBERTY PLACE 1650 MARKET ST, SUITE 4900 PHILADELPHIA, PA 19103				
EXAMINER				
AUSTIN, AARON				
ART UNIT		PAPER NUMBER		
1784				
NOTIFICATION DATE		DELIVERY MODE		
04/29/2010		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

pto.phil@dlapiper.com

### Office Action Summary

**Application No.**

10/565,362

**Applicant(s)**

YAMAJI ET AL.

**Examiner**

AARON S. AUSTIN

**Art Unit**

1784

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 January 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 23, 25-38 and 44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23, 25-38 and 44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date 1/20/10, 1/29/10
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 44 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In particular, lines 7-9 recite in part "disposed on a surface of a plating layer on a surface of the steel sheet and comprising..." without defining what the term "comprising" modifies. More particularly, the language refers to *something* disposed on the surface of the plating layer rather than the plating layer itself. As such, it is impossible to determine what "comprising" refers to. For this reason the claim is indefinite.

For purposes of examination, the claim will be treated as requiring the term comprising to define the composition of the plating layer as it would appear from the specification and corresponding claim 1 that this was Applicant's intent.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 23, 25-27, 33-35, 38, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oppen et al. (US 4,264,378) in view of Maru et al. (JP 06-146001) and Lee et al. (US 4,330,598).

Oppen et al. teach a chromium-free surface treatment for phosphatizing a metal surface to prepare it for further application of organic coatings. The process produces a chromium-free film layer on the metal surface wherein the layer is comprised of phosphate (a salt containing a phosphoric acid group) and a metal cation such as a tetravalent vanadate ion (column 3, line 27). Further a metal such as Al, Mg, or Zn may be included (table at the bottom of columns 3-4).

Oppen et al. teach the chromium-free film layer may be applied to a multiplicity of metals and metal alloys with special applications consisting of treatment of iron, zinc, or alloys thereof (column 4, lines 1-4). However, they do not identify a steel sheet with an overlying plating layer including zinc and/or aluminum as the metal/metal alloy to which the chromium-free film layer is applied.

Maru et al. teach a steel sheet plated with an Al-Zn alloy to provide alkaline resistance, black rust resistance, and lubricity. Likewise, Lee et al. teach steel coated with a zinc-aluminum alloy providing increased corrosion and oxidation resistance. The alloy is comprised of 30 to 75 weight percent zinc with the balance essentially aluminum. Therefore, as 1) Maru et al. and Lee et al. clearly teach steel is in need of corrosion and oxidation resistance which can be provided by an Al-Zn coated steel sheet, and 2) as Oppen et al. teach the chromium-free film layer is particularly suited for application to zinc or alloys thereof, it would have been obvious to one of ordinary

skill in the art at the time of the claimed invention to apply the chromium-free film layer of Oppen et al. to the plated steel of Maru et al. or Lee et al. to achieve the benefits of the coating taught by Oppen et al.

Regarding claims 25-26, as like materials are used in a like manner as compared to the claims, the amount of adhesion is expected to be as claimed.

Regarding claim 27, a coating weight of 0.03 to 0.6 g/m<sup>2</sup> is taught (column 3, line 44), but a suitable thickness range is not specifically identified. However, "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In this case, Oppen et al. do not specify the workable ranges for the thickness of the chromium-free film layer, but they do describe the general conditions of the claim as set forth above. It would not be inventive to discover the workable ranges by routine experimentation of the invention taught by Oppen et al.

Regarding claim 33, an organic coating such as an organic resin may be applied to the chromium-free film layer (column 1, lines 5-11; column 4, lines 46-49). However, a suitable thickness range is not specifically identified. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In this case, Oppen et al. do not specify the workable ranges for the thickness of the organic coating, but they do describe the general conditions of

the claim as set forth above. It would not be inventive to discover the workable ranges by routine experimentation of the invention taught by Oppen et al.

Regarding claim 34, as like materials are used in a like manner as compared to the claims, the amount of adhesion is expected to be as claimed.

Regarding claim 35, water soluble resins are taught (column 4, lines 46-49).

Regarding claim 38, Maru et al. teach an Al-Zn alloy plating with aluminum in an amount overlapping the claimed range. Likewise, Lee et al. teach the Al-Zn alloy is comprised of 30 to 75 weight percent zinc with the balance essentially aluminum.

Claims 28-32 are rejected under 35 U.S.C. 103(a) as obvious over Oppen et al. (US 4,264,378) in view of Maru et al. (JP 06-146001) and Lee et al. (US 4,330,598), and further in view of Yamaji et al. (JP2004183053A).

Oppen et al. in view of Maru et al. and Lee et al. teach a chromium-free surface treatment for phosphatizing a metal surface as described above.

Oppen et al. teach an organic coating such as an organic resin may be applied to the chromium-free film layer (column 1, lines 5-11; column 4, lines 46-49). However, they do not teach including a resin in the chromium-free surface composition.

Yamaji et al. teach a surface-treated steel sheet. The steel sheet is treated with a phosphatizing composition comprising metal compounds in combination with an organic resin formed of a copolymer having the composition claimed. The composition provides the benefits of inhibited peeling or blackening and corrosion resistance. Therefore, as Yamaji et al. clearly teach including copolymer equivalent to the

copolymer claimed in a phosphatizing composition provides the advantage of further corrosion resistance and reduced peeling or blackening, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use the copolymer of Yamaji et al. in the phosphatizing composition of Oppen et al.

Regarding claim 29, as like materials are used in a like manner as compared to the claims, the amount of adhesion is expected to be as claimed.

Claims 33-37 are rejected under 35 U.S.C. 103(a) as obvious over Oppen et al. (US 4,264,378) in view of Maru et al. (JP 06-146001) and Lee et al. (US 4,330,598), and further in view of Yamaji et al. (JP2004183053A).

Oppen et al. in view of Maru et al. and Lee et al. teach a chromium-free surface treatment for phosphatizing a metal surface as described above.

Oppen et al. teach an organic coating such as an organic resin may be applied to the chromium-free film layer (column 1, lines 5-11; column 4, lines 46-49). However, they do not teach the composition of the resin.

Yamaji et al. teach a surface-treated steel sheet. The steel sheet is treated with a phosphatizing composition comprising metal compounds in combination with an organic resin formed of a copolymer having the composition claimed. The composition provides the benefits of inhibited peeling or blackening and corrosion resistance. Therefore, as 1) Yamaji et al. clearly teach coating a steel sheet with a copolymer composition equivalent to the copolymer claimed provides the advantage of further corrosion resistance and reduced peeling or blackening, and 2) Oppen et al. teach the

chromium-free film layer promotes adhesion to organic coatings applied to the metal substrate, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use the organic based copolymer composition of Yamaji et al. as the resin composition overlying the chromium-free film layer composition of Oppen et al.

Regarding claim 34, as like materials are used in a like manner as compared to the claims, the amount of adhesion is expected to be as claimed.

### ***Response to Arguments***

Applicant's arguments, see the Remarks, filed 1/29/10, with respect to the objection to claim 44 and the rejections over Yoshimi et al. (US 6,562,474) alone and in combination have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Oppen et al. (US 4,264,378) as set forth above.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within



TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AARON S. AUSTIN whose telephone number is (571)272-8935. The examiner can normally be reached on Monday-Friday: 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aaron S Austin/  
Primary Examiner, Art Unit 1784